



Title	ELEVEN NEW HELINA-SPECIES COLLECTED ON WET STONES ALONG MOUNTAIN STREAMS IN PAPUA NEW GUINEA (DIPTERA : MUSCJ.DAE)
Author(s)	Shinonaga, Satoshi; Kano, Rokuro
Citation	ESAKIA 21 p19-29
Issue Date	1984-02-15
URL	http://hdl.handle.net/2324/2448
Right	

This document is downloaded at: 2012-10-12T15:38:56Z

**ELEVEN NEW HELINA-SPECIES COLLECTED ON WET STONES
ALONG MOUNTAIN STREAMS IN PAPUA NEW GUINEA
(DIPTERA : MUSCIDAE)***

SATOSHI SHINONAGA and ROKURO KANO

Department of Medical Zoology, Faculty of Medicine,
Tokyo Medical and Dental University,
1-5 Yushima, Bunkyo-ku, Tokyo 113, Japan

Abstract

Eleven new species belonging to the genus *Helina* R.-D. from Papua New Guinea are described and figured. They are *H. fluocharis*, *H. papuana*, *H. allisoni*, *H. hirashimai*, *H. wauensis*, *H. fuscifacies*, *H. nigricornis*, *H. nais*, *H. grandicornis*, *H. mendiensis* and *H. nana*. All of them are found on wet stones or sand along mountain streams in the forests.

Flies belonging to the genus *Helina* R.-D. are characterized by having no posterodorsal bristles on the hind tibia, a developed prealar bristle (rarely absent), and no setae on the basal node of r_1 and r_{4+5} (rarely present on the dorsal and ventral surfaces or ventral surface). They are commonly grayish or dark colored species usually found on grasses, leaves or tree trunks in the forests.

Vockeroth (1972) gave a key to the subfamilies of Muscidae of New Guinea and Oceania after examination of the large collection preserved in the Bishop Museum. He followed Hennig's subfamily definition based on the structure of the ovipositor. New Guinean *Helina* falls into two couplets in his key. One is characterized by having one or more distinct setae on the node of *Rs* and also often above (couplet 14 (13)) and the other has no setae on the node of *Rs* (couplet 15 (14)). The *Helina* species described in this paper have much longer prealar bristle than 2nd notopleural bristle and the body is yellow or orange in color. They are found on wet stones or sand along mountain streams in the forests. This is the first record of *Helina* from such a habitat.

The eleven species described in this paper are unique in their external characters and also habitat.

Holotypes of the new species described in this paper are preserved in the

* Supported by the Grants-in-Aid for Overseas Scientific Survey, Ministry of Education, Science and Culture, in 1973 and 1977 to Tokyo Medical and Dental University (Prof. R. Kano) and in 1982 to Kyushu University (Prof. Y. Hirashima).

Department of Entomology, B. P. Bishop Museum, Honolulu, Hawaii and paratypes are deposited in Entomology Section, Department of Primary Industry, Konedobu, Papua New Guinea, Entomological Laboratory, Kyushu University, Fukuoka and Department of Zoology, National Science Museum, Tokyo.

KEY TO THE SPECIES (*prealar bristle much longer than*
2nd notopleural bristle) DESCRIBED IN THIS PAPER

Males

1. Ventral surface of node of r_1 and r_{4+5} hairy (2)
- Vein r_1 and r_{4+5} bare dorsally and ventrally (6)
2. Eyes densely covered with long hairs; frons open, about 0.10 to 0.12 of head width (3)
- Eyes sparsely covered with microscopic hairs (4)
3. Sternopleuron, mesopleuron and pteropleuron with dark spots which occupy more than one-third of their area respectively *H. fluocharis*, n. sp.
- Sternopleuron, mesopleuron and pteropleuron usually orange in color, rarely faint brownish spots present *H. papuana*, n. sp.
4. Frons open, about 0.22 of head width; lateral part of parafrontals parallel *H. wauensis*, n. sp.
- Frons narrow, at least less than 0.10 of head width (5)
5. Frons a little wider than front ocellus; anterior half of *ori* long and cruciate, posterior half short and reclinate; palpi black *H. allisoni*, n. sp.
- Frons about 0.06 of head width; anterior half of *ori* a little longer than posterior ones; antennae yellow or orange *H. hirashimai*, n. sp.
6. Frons widely open, wider than width of 3rd antennal segment (8)
- Frons narrow, equal to or a little wider than width of front ocellus (7)
7. Anterior half of *ori* long and cruciate; posterior half short and reclinate; t_1 with *p*-seta *H. mendiensis*, n. sp.
- Anterior half of *ori* not distinctly longer than posterior half; t_1 without *p*-seta *H. nais*, n. sp.
8. Distinct *ors* absent; t_1 without anterodorsal bristles *H. nana*, n. sp.
- Distinct *ori* present; t_1 with anterodorsal bristle (9)
9. Face reddish brown *H. fuscifacies*, n. sp.
- Face black (10)
10. Antennae dark brown to reddish brown; scutum with 3 dark longitudinal stripes *H. grandicornis*, n. sp.
- Antennae black; scutum without distinct longitudinal stripes *H. nigricornis*, n. sp.

***Helina fluocharis*, new species**

Body length of the male and female 5.0–7.0 mm.

Male: Head: Frons slightly open, narrowest part about 0.10 of head width; eyes densely covered with hairs; frontal stripe dark brown, upper half darker than lower half; parafrontals dark brown; parafacials reddish brown with silvery pollen; *ori* hair-like, extending until frontal lunula; *ors* absent; antennae orange, long and extending to mouth edge; length of 3rd antennal segment about 4x that of the 2nd segment; palpi reddish brown. **Thorax:** Scutum black

with grayish pollen, except lateral part of presutural area; humeral callus, notopleuron and pteropleuron orange; anterior parts of mesopleuron and sternopleuron and hypopleuron black; *ac* 0+1; *dc* 2+3; *ia* 0+1; *h* 2; *ph* 1; *nt* 2; *sa* 1; *pa* 1; *st* 1+2; *scut* 1 preapical and 2 laterals; notopleuron with several hairs; scutellum black with hairs on lateral and ventral surfaces; prosternum, pteropleuron, hypopleuron, and squamopleuron bare; meso- and metathoracic spiracles orange in color. *Wings*: Hyaline; *r*₁ bare; *r*₄₊₅ with 2-4 setae on basal node of ventral surface; *m-m* bending anteriorly on the middle part; squamae orange; halter orange. *Legs*: Coxae, trochanters, distal parts of femora and tibiae orange; tarsi black; *f*₁ with a row of *pd* and *pv*; *t*₁ without p-seta; *f*₂ with long hair-like bristles on ventral surface; *t*₂ with 2 p-seta; *f*₃ with a row of *av* and *pv*; *t*₃ with 1 *ad* and several *av*. *Abdomen*: Second tergite yellow; 3rd tergite yellow anteriorly and black posteriorly; 4th and 5th tergites black with grayish pollen.

HOLOTYPE: Male, Baiyer River Sanct., 1,200 m, W. Highland District, 4-8. VIII. 1982, S. Shinonaga.

PARATYPES: Same data as holotype, 10♂♂, 20♀♀.

REMARKS: The present species is closely related to *H. papuana* in external characters, but differs from it in having dark spots on the sternopleuron, mesopleuron and pteropleuron. The frons width is a little narrower than in *H. papuana*.

Helina papuana, new species

Male: Body length 6.0-7.0 mm. *Head*: Frons slightly open, narrowest part 0.12 of head width; eyes densely covered with long hairs; frontal stripe black with grayish pollen; parafrontals and parafacials black with grayish pollen; upper part of parafacials reddish, *ori* situated throughout its length; *ors* absent; antennae orange, length of 3rd antennal segment about 4x of that of the 2nd; palpi reddish brown. *Thorax*: Scutum black, lateral part of presutural area and postalar reddish; *ac* 0+1; 2+3; *dc* 2+3; *ia* 0+1; *h* 2; *ph* 1; *nt* 2; *sa* 2; *pa* 2; *st* 1+2; *scut* 1 preapical and 2 lateral; notopleuron hairy; *pra* present, much longer than 2nd *nt*; scutellum black with grayish pollen and hairs on ventral and lateral surfaces; meso- and metathoracic spiracles yellow orange; hypopleuron black. *Wings*: Hyaline; *r*₁ bare; *r*₄₊₅ with short setae on basal node of ventral surface; *m-m* bending anteriorly; squamae orange; halter orange. *Legs*: Coxae and trochanters orange; femora black with orange apices; tibiae orange; tarsi black; *f*₁ with a row of long *pd* and *pv*; *t*₁ without p-seta; *f*₂ with a row of long *pv*, hair-like *av*; *f*₂ with 2 p-seta; *f*₃ with a row of long *av* on entire length; a row of *pv* on basal half; *t*₃ with 1 *ad*, several *av*. *Abdomen*: 2nd tergite yellow; basal half of 3rd tergite yellow; 4th and 5th tergites black.

HOLOTYPE: Male, Regina Creek, Wau, 25. XII. 1981, S. Shinonaga:

PARATYPES: 11♂♂, 15♀♀, same data as holotype; 16♂♂, 3089, same locality, 28. XII. 1981, S. Shinonaga; 3♂♂, 4♀♀, same locality, 25. VII. 1982, S. Shinonaga; 8♂♂, 20♀♀, Bulolo, 8-9. I. 1974, S. Shinonaga; 4♀♀, Wau, 5-17. I. 1974, R. Kano; 1♀, Wau, 30. VIII. 1982, S. Shinonaga.

***Helina allisoni*, new species**

Male: Body length 5.5-6.5 mm. **Head:** Frons narrow, a little wider than front ocellus; eye sparsely covered with microscopic hairs; frontal stripe dark brown, interrupted on the middle part; parafrontals narrow, dark brown; parafacials reddish brown with grayish pollen; *ori* long, lower ones cruciate and upper ones short, reclinate; antennae reddish brown, length of 3rd antennal segment about 4x that of the 2nd; arista long plumose; palpi dark brown. **Thorax:** Scutum black, but lateral part of presutural area reddish; *ac* 0+1; *dc* 2+3; *ia* 0+1; *h* 2; *ph* 1; *nt* 2; *pra* present, much longer than 2nd *nt*; *pa* 2; *sa* 2; *scut* 1 preapical and 2 lateral; *st* 1+2; notopleuron bare; scutellum black; meso- and metathoracic spiracles yellow orange; sternopleuron, hypopleuron and pteropleuron black. Wings: Hyaline, veins dark brown; *r*₁ bare; *r*₄₊₅ with 2-3 short setae on basal node of ventral surface; *m-m* slightly bending toward base on the middle part; squamae yellowish; halter brown, knob darker. **Legs:** Black, knee brownish; *f*₁ with a row of long *pd* and *pv*; *t*₁ without p-seta; *f*₂ with a row of long *av*; *t*₂ with 2 *p*-seta; *f*₃ with a row of long *ad* and *av*, long *pv* on basal half; *t*₃ with 1 *ad*, 3-4 *av*; tarsi black. **Abdomen:** 2nd tergite and anterior half of 3rd tergite yellow; posterior half of 3rd, 4th and 5th tergites black.

HOLOTYPE: Male, Mendi, Nipa, 2,000 m, 3. II. 1978, R. Kano.

PARATYPES: 10♂♂, 7♀♀, same data as holotype; 1♂, Mt. Kaindi, Wau, 10-13. I. 1974, S. Shinonaga; 1♂, Wau, 22-31. XII. 1973, H. Shima; 1♂, Wau, 5-17. I. 1974, S. Shinonaga; 1♂, Mt. Kaindi, Wau, 4. I. 1982, S. Shinonaga; 1♂, Wak River, Margarina, 2,100 m, 5. II. 1978, R. Kano.

REMARKS: This species is characterized by the following characters: ventral surface of node of *Rs* hairy; eyes sparsely covered with microscopic hairs; frons contiguous; antennae dark brown; *t*₁ without p-seta; and notopleuron bare.

***Helina hirashimai*, new species**

Male : Body length 4.5-6.0 mm. **Head:** Frons narrow, narrowest part 0.06 of head width; eyes hairy, sparsely covered with microscopic hairs; frontal stripe black; parafrontals and parafacials black with grayish pollen; *ori* extending on entire length of parafrontals; *ors* absent; antennae orange, length of 3rd antennal segment about 3x that of the 2nd; palpi brown, face black;

anterior margin brownish. **Thorax:** Scutum black, slightly covered with grayish pollen; humeral callus, notopleuron and mesopleuron orange; sternopleuron and hypopleuron black; *ac* 0+1; *dc* 2+3; *ia* 0+1; *h* 2; *ph* 1; *nt* 2; *sa* 2; *pa* 2; *scut* 1 preapical and 2 lateral; *st* 1+2; notopleuron bare; meso- and metathoracic spiracles orange. **Wings:** Hyaline; *r*₁ bare; *r*₄₊₅ with short setae on ventral surface; *m-m* slightly bending; squamae orange, marginal cilia concolorous; halter orange. **Legs:** Coxae and trochanters orange; femora black; tibiae brown; *t*₁ without *p*-seta; *f*₂ with a row of short *av* and *pv*; *t*₂ with 2 *p*-seta; *f*₃ with a row of long *ad* and *au*, sparse row of *pv*; *t*₃ with 1 *ad* and several *av*. **Abdomen:** 2nd tergite yellow; anterior half of 3rd tergite yellow and posterior half black; 4th and 5th tergites black.

HOLOTYPE: Male, Regina Creek, Wau, 25. VII. 1982, S. Shinonaga.

PARATYPES: 2♂♂, Wau, 5-17. I. 1974, R. Kano; 1♂, Regina Creek, Wau, 28. XII. 1981, S. Shinonaga.

REMARKS: The present species is closely related to *H. allisoni* in external features, but differs in having much shorter anterior *ori*.

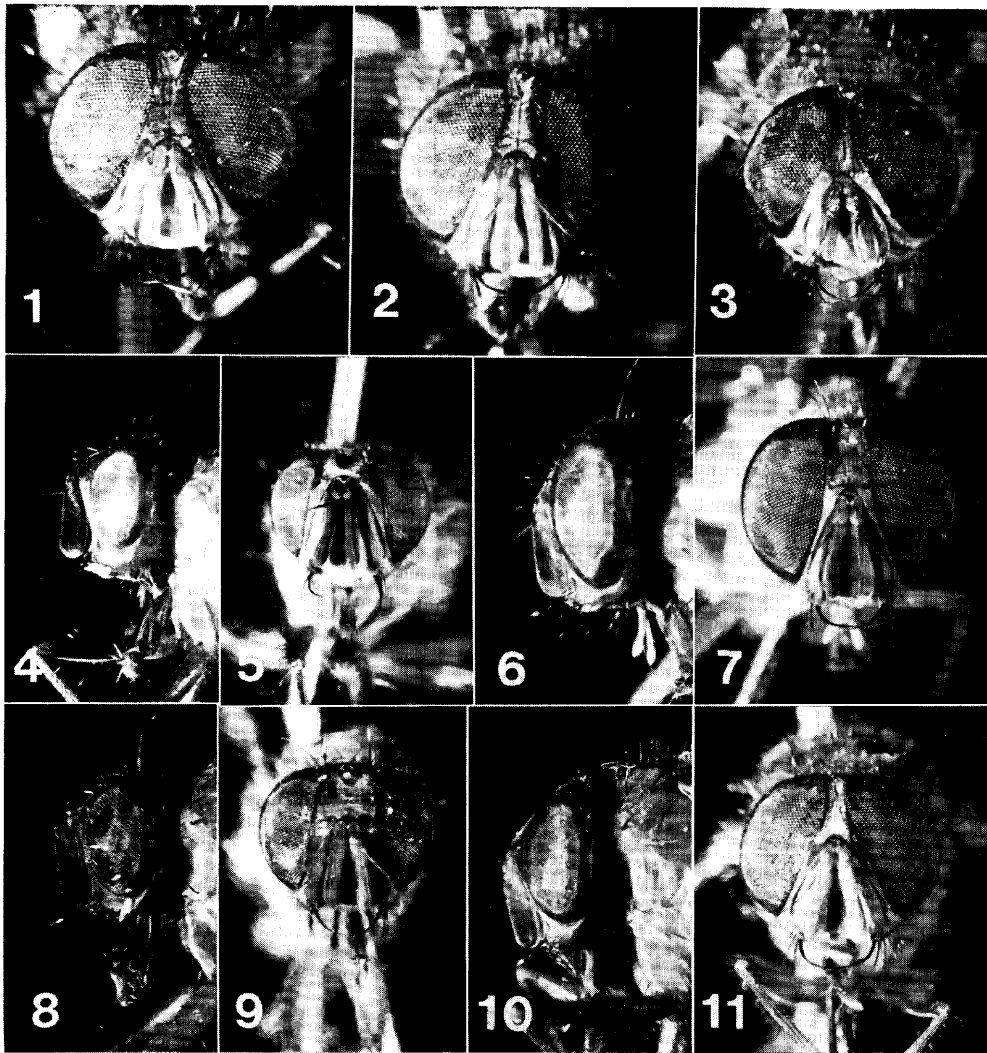
Helina wauensis, new species

Male: Body length about 6.5 mm. **Head:** Frons widely open, about 0.22 of head width; eyes bare; frontal stripe black, parallel-sided; parafrontals black; parafacials brown with grayish pollen; *ori* cruciate; proclinate *ors* present; face dark brown with grayish dust; antennae large, brown to dark brown; length of 3rd antennal segment about 5x of that of 2nd segment; palpi brown. **Thorax:** Scutum black, but anterior and lateral margin reddish brown; pleura orange; *ac* 0+1; *dc* 2+3; *ia* 0+1; *h* 2; *ph* 1; *nt* 2; *st* 1+2; *sa* 2; *pa* 2; *scut* 1 preapical and 2 lateral; *pra* present, much longer than 2nd *nt*; scutellum black, lateral margin reddish brown; meso- and metathoracic spiracles yellow. **Wings:** Hyaline; *r*₁ bare; *Rs* with several short setae on ventral surface; veins dark brown; squamae orange, marginal cilia concolorous; halter yellow. **Legs:** Coxae, trochanters and femora orange; tibiae and tarsi black; *f*₁ with a row of *pd* and *pv*; *t*₁ with *p*-seta; *f*₂ with a short row of *av* and *al*; *t*₂ with 2 *p*-seta; *f*₃ with a row of *ad*, several long *av* on distal 1/3; 2 preapical *pd*; *t*₃ with 1 *ad* and several short *au*. **Abdomen:** Second tergite and anterior half of 3rd tergite yellow; posterior half of 3rd, 4th and 5th tergites black; 1st to 4th sternites yellow.

HOLOTYPE: Male, Regina Creek, Wau, 28. XII. 1981, S. Shinonaga.

PARATYPE: 1♂, same locality and collector, 25. XII. 1981.

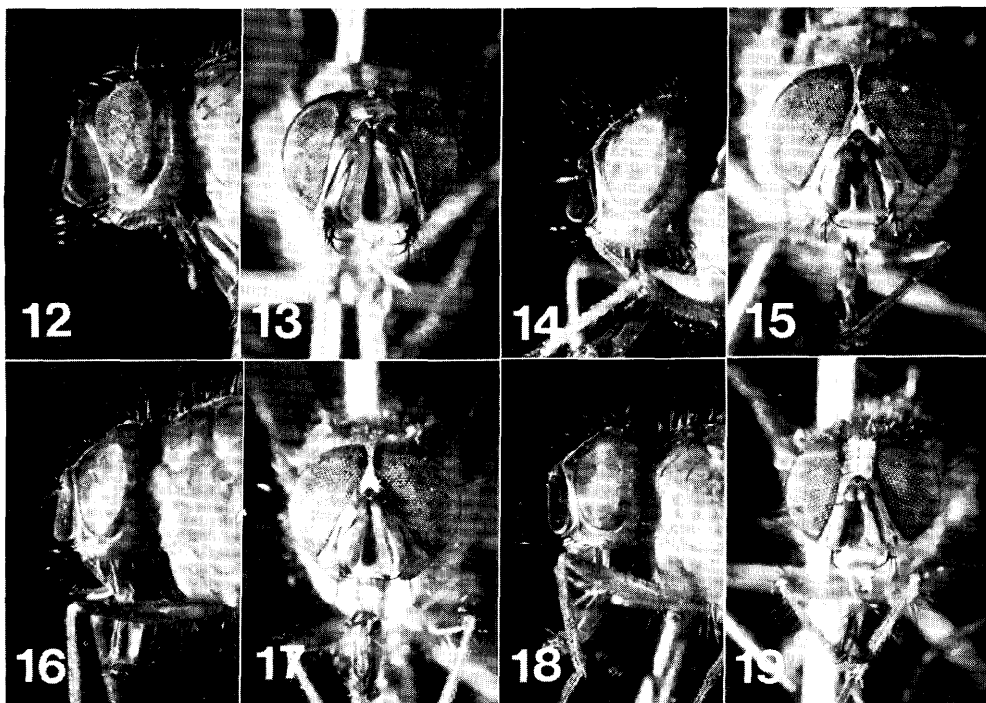
REMARKS: This species differs from the other species by having short setae on the dorsal and ventral surfaces on the node of *Rs* and a parallel-sided frons.



Figs. 1-11. Anterior and lateral views of male head. (Scal: 1.2 mm). 1: *Helina papuana*, n. sp. 2: *Helina fluocharis*, n. sp. 3: *Helina allisoni*, n. sp. 4 and 5: *Helina nigricornis*, n. sp. 6 and 7: *Helina wauensis*, n. sp. 8 and 9: *Helina fuscifacies*, n. sp. 10 and 11: *Helina hira-shimai*, n. sp.

Helina fuscifacies, new species

Male: Body length 4.5-6.0 mm. **Head:** Frons widely open, narrowest part about 0.43 of head width ; eyes sparsely covered with microscopic hairs ; frontal stripe blackish brown ; parafrontals and parafacials brown to blackish brown; parafacials narrow ; face reddish brown; *ori* confined on anterior half; 2pro-clinate *ors* present; antennae large, dark brown, length of 3rd segment 5x of



Figs. 12-19. Anterior and lateral views of male head. (Scale: 1.2 mm). 12 and 13: *Helina grandicornis*, n. sp. 14 and 15: *Helina mendiensis*, n. sp. 16 and 17: *Helina nais*, n. sp. 18 and 19: *Helina nana*, n. sp.

2nd segment ; arista short feathered; palpi dark brown. *Thorax*: Scutum reddish brown with 3 dark and obscure longitudinal stripes ; pleura orange; *ac* 0+1; *dc* 2+3; *ia* 0+2; *h* 2; *ph* 1; *nt* 2; *sa* 2; *pa* 2; *st* 1+2; *scut* 1 preapical and 2 lateral ; notopleuron with several short setae around 2nd *nt*; scutellum reddish brown ; meso- and metathoracic spiracles orange. *Wings*: Hyaline; *r*₁ bare ; *r*₄₊₅ bare; *m-m* straight; squamae brown, marginal cilia dark brown; halter orange. *Legs*: Coxae, trochanters, femora and tibiae yellow ; tarsi black; *f*₁ with a row of *pd* and *pv*; *t*₁ with *p*-seta; *f*₂ without long bristles, 3 preapical *pd*; *t*₂ with 2 *p*-seta ; *f*₃ with a row of *ad* and *pd* on distal half; *t*₃ with 1 *ad* and several *av*. *Abdomen*: Second tergite and anterior half of 3rd tergite orange; posterior half of 3rd, 4th and 5th tergites black.

HOLOTYPE: Male, Nami Creek, Wau, 19. XII. 1981, S. Shinonaga.

PARATYPES: 3 ♂♂, same data as holotype ; 5 ♂♂, same locality and collector, 31. XII. 1981; 2 ♂♂, Wau, 5-17. I. 1974, R. Kano and S. Shinonaga; 4 ♂♂, Wau, 22-31. XII. 1973, H. Shima; 9 ♂♂, Wau, 10-13. I. 1974, S. Shinonaga.

REMARKS: This species has the following characters: frons widely open,

distinct *ors* present, antennae dark brown, face reddish brown, arista pubescent, t_1 with *p*-seta and anterodorsal bristle, squamae dark brown, scutellum hairy on lateral and ventral surfaces and notopleuron bare.

***Helina nigricornis*, new species**

Male: Body length 4.5–5.5 mm. **Head:** Frons widely open, narrowest part about 0.28 of head width ; eyes sparsely covered with microscopic hairs; frontal stripe black, anterior part dark brown ; parafrontals black without pollen; parafacials black with grayish pollen ; face black; *ori* cruciate ; 2 proclinate *ors* present; antennae large and black, length of 3rd segment about 5x that of the 2nd segment; arista short haired; palpi dark brown. **Thorax:** Scutum black, slightly covered with grayish pollen; anterior part of presutural area between dorsocentral bristles grayish seen from behind ; notopleuron, humeral callus, mesopleuron and propleuron orange ; sternopleuron, pteropleuron and hypopleuron black; *ac* 0+1; *dc* 2+3; *ia* 0+1; *h* 2; *ph* 1; *nt* 2; *pra* present, much longer than 2nd *nt*; *sa* 2; *pa* 2; *scut* 1 preapical and 2 lateral ; *st* 1+2; notopleuron bare; scutellum black; meso- and metathoracic spiracles orange. **Wings:** Hyaline, veins dark brown; r_1 bare ; r_{4+5} bare; *m-m* straight; squamae light brown, marginal cilia dark brown ; halter orange. **Legs:** Coxae and trochanters orange ; femora, tibiae, and tarsi blackish ; f_1 with long *pd* and *pw*; t_1 with *p*-seta ; f_2 with a short row of *av*, 1 long *al*; t_2 with 2 *p*-seta; f_3 with a row of long *ad*, sparse *av* and *pw*; t_3 with 1 *ad* and 5 *av*. **Abdomen:** Second and anterior half of 3rd tergites yellow; posterior half of 3rd, 4th and 5th tergites black.

HOLOTYPE: Male, Nami Creek, Wau, 19. XII. 1981, S. Shinonaga.

PARATYPES: 8♂♂, same data as holotype ; 2♂♂, same locality and collector, 10. XII. 1981; 3♂♂, Wau, 22-31. XII. 1973, H. Shima; 11♂♂, Wau, 5-17. I. 1974, R. Kano and S. Shinonaga.

REMARKS: The present species is characterized by the large and black antennae and widely open frons with distinct *ors* as in female. The species is closely related to *H. fuscifacies* by having *p* and *ad* setae on t_1 , but easily differentiated by the black antennae and face.

***Helina nais*, new species**

Male: Body length 4.5–5.5 mm. **Head:** Frons narrow, narrowest part a little wider than diameter of front ocellus ; eyes covered with microscopic hairs; frontal stripe black ; parafrontals and parafacials black ; parafacials narrow with grayish pollen ; *ori* reaching to ocellar triangle ; *ors* absent; antennae black to dark brown, length of 3rd segment about 4x that of the 2nd segment; palpi dark brown. **Thorax:** Scutum black, slightly covered with grayish pollen, lateral margin reddish; *ac* 0+1; *dc* 2+3; *ia* 0+1; *h* 2; *ph* 1; *nt* 2; *sa* 2; *pa* 2; *pra* present, longer than 2nd *nt*; *st* 1+2; *scut* 1 preapical and 2 lateral ; scutel-

lum black, with microscopic hairs on ventral surface; prosternum bare; meso- and metathoracic spiracles yellow. Wings: Hyaline; veins dark brown; r_1 bare; r_{4+5} bare; $m-m$ straight; squamae dark brown, marginal cilia concolorous; halter orange. Legs: Coxae, trochanters and basal 1/3 of femora orange; fore tibiae brown, other parts black; f_1 with a row of pd and pv ; t_1 without p -seta; f_2 with a short row of av , sparse long bristles on pv ; t_2 with 2 p -seta; f_3 with a row of ad and av , long bristles on pv ; t_3 with 1 ad , and 3-4 av . *Abdomen*: Second and anterior part of 3rd tergites yellow; posterior half of 3rd, 4th and 5th tergites black.

HOLOTYPE: Male, Mendi, Nipa, 2,000 m, 3. II. 1978, R. Kano.

PARATYPES: 2♂♂, same data as holotype; 1♂, Wau, 5-17. I. 1974, R. Kano; 6♂♂, Nami Creek, 1,700 m, 19. VII. 1982, S. Shinonaga; 1♂, same locality and collector, 19. XII. 1981.

REMARKS: This species is closely related to *H. mendiensis*, but differs from it in having much shorter *ori* on anterior half of parafrontals which are longer in *mendiensis*.

Helina grandicornis, new species

Male: Body length 5.0-6.5 mm. *Head*: Frons widely open, narrowest part (vertex) about 0.32 and widest part 0.40 of head width; eyes sparsely covered with microscopic hairs; frontal stripe black to dark brown; parafrontals black, narrow with grayish pollen; *ori* cruciate, situated on anterior part; 2 proclinate *ors* present; antennae reddish brown, extraordinarily large; length of 3rd antennal segment about 4x that of the second segment; arista dark brown, short haired; palpi dark brown. *Thorax*: Scutum reddish brown with 3 longitudinal stripes which fused on presutural area; ac 0+1; dc 2+3; ia 0+1; h 2; ph 1; nt 2; pra present, much longer than 2nd nt ; sa 2; pa 2; st 1+2; $scut$ 1 preapical and 2 lateral; notopleuron with several hairs around 2nd nt ; scutellum reddish brown, darker basally; meso- and metathoracic spiracles orange. Wings: Hyaline; r_1 bare; r_{4+5} bare; $m-m$ straight; squamae dark brown, marginal cilia concolorous; halter orange. Legs: Coxae, trochanters and femora orange except distal part black; tibiae and tarsi black; f_1 with a row of pd and pv ; t_1 with p -seta; f_2 with short row of av , 2 al on middle part; t_2 with 2 p -seta; f_3 with a row of ad and av , sparse row of pv ; t_3 with 1 ad and several av . *Abdomen*: Second and anterior part of 3rd tergites yellow; posterior half of 3rd, 4th and 5th tergites black.

HOLOTYPE: Male, Nami Creek, Wau, 1,700 m, 19. VII. 1982, S. Shinonaga.

PARATYPES: 2♂♂, same data as holotype; 1♂, Wau, 5-17. I. 1974, R. Kano; 3♂♂, 22-31. XII. 1973, H. Shima; 2♂♂, Mendi, Nipa, 2,500 m, 3. II. 1978, R. Kano.

REMARKS: The present species is closely related to *H. nigricornis* by having large antennae and blackish face, but easily differentiated by the reddish

brown antennae and 3 dark longitudinal stripes on the scutum.

***Helina mendiensis*, new species**

Male : Body length 5.0-5.5 mm. **Head**: Frons narrow, narrowest part about same width of front ocellus; eyes sparsely covered with microscopic hairs; frontal stripe black, interrupted on the middle part by closed parafrontals; parafrontals and parafacials black, narrow, with grayish pollen; *ori* reaching to near frontal lunula, anterior half long and hair-like and cruciate, posterior half short and inclinate; *ors* absent; antennae black, length of 3rd segment about 3x that of the 2nd segment; palpi brown. **Thorax**: Scutum black, reddish brown laterally; *ac* 0+1; *dc* 2+3; *ia* 0+1; *h* 2; *ph* 1; *nt* 2; *pra* present, longer than 2nd *nt*; *sa* 2; *pa* 2; *st* 1+2; *scut* 1 preapical and 2 lateral; notopleuron bare; scutellum black, bare ventral surface; meso- and metathoracic spiracles yellow or orange. Wings: Hyaline; *r*₁ bare; *r*₄₊₅ bare; *m-m* slightly bending anteriorly; squamae dark brown, marginal cilia concolorous; halter orange. Legs: Coxae, trochanters and basal half of femora orange, other parts black; *f*₁ with a row of *pd* and *pv*; *t*₁ with p-seta; *f*₂ with long hair-like *au* and *pv* throughout on its length; *t*₂ with 2 p-seta; *f*₃ with a row of *ad* and *av*, several hair-like *pv* on basal 1/3; *t*₃ with 1 *ad* and *av*. **Abdomen**: Second and anterior half of 3rd tergites yellow; posterior half of 3rd, 4th and 5th tergites black.

HOLOTYPE: Male, Mendi, Nipa, 2,000 m, 3. II. 1978, R. Kano.

PARATYPES: 5♂♂, same data as holotype.

REMARKS: This is a small and dark species closely related to *H. nais*, but differs from it in having long and cruciate *ori* on anterior half of parafrontals which are short in *nais*.

***Helina nana*, new species**

Male: Body length 4.0-4.5 mm. **Head**: Frons widely open, narrowest part 0.37 of head width; eyes sparsely covered with microscopic hairs; frontal stripe black with grayish pollen, parallel-sided; parafrontals black, shining; parafacials black, narrow, with grayish pollen; *ori* extending on its entire length; 1 very small *ors* present; antennae black, length of 3rd segment about 3.5x that of the 2nd; arista pubescent, black; palpi dark brown. **Thorax**: Scutum black, slightly covered with grayish pollen; *ac* 0+1; *dc* 2+3; *ia* 0+1; *h* 2; *ph* 1; *nt* 2; *pra* present; *sa* 2; *pa* 2; *scut* 1 preapical and 2 lateral; *st* 1+2; scutellum black, bare ventral surface; mesothoracic spiracles yellow. wings: Hyaline; *r*₁ bare; *r*₄₊₅ bare; *m-m* slightly bending anteriorly; squamae dark brown, marginal cilia concolorous; halter orange. Legs: Orange except tarsi black; *f*₁ with a row of *pd* and *pv*; *t*₁ with p-seta; *f*₂ with 3 preapical *pd*; *t*₂ with 2 p-seta; *f*₃ with a row of *ad* and *av*; *t*₃ with 1 *ad* and *au*. **Abdomen**: Second

and basal half of 3rd tergites yellow; posterior half of 3rd, 4th and 5th black.

HOLOTYPE: Male, Wau, 5-17. I. 1974, R. Kano.

PARATYPES: 3♂♂, same data as holotype ; 3♂♂, Nami Creek, Wau, 1,700 m, 19. VII. 1982, S. Shinonaga.

REMARKS: This species is characterized by the following characters: widely open frons, dark brown antennae, t_1 with p -seta, t_1 without ad , notopleuron hairy around 2nd nt , scutellum setose laterally and dark brown squamae.

Acknowledgements

The authors are grateful to the late Dr. J. L. Gressitt, Director of Wau Ecology Institute and Dr. A. Allison, Associate Director of Wau Ecology Institute for their kind co-operation to our research; to Mr. A. C. Pont, Department of Entomology, British Museum (Nat. Hist.) for his valuable advice; to Professor. Y. Hirashima, Kyushu University and Dr. J. Ismay, Entomology Section, Department of Primary Industry, P. N. G., for their kind arrangement and co-operation for this study; to Mr. N. Kwapena, First Assistant Director, Wildlife Division, Government of Papua New Guinea and his staffs for their kind permission and arrangement for our study; to Dr. T. Nakajima, Professor of Molecular Biology, Tokyo Medical and Dental University, for his kind help in this study.

References

- Pont, A. C. 1966. Notes on the Muscidae of New Guinea (Diptera). I. The types of Francis Walker. *Ann. Mag. Nat. Hist.*, Ser. 13, 9: 87-99.
- 1966. Ditto. II. Species described by Stein in the *Annali Mus. Civ. St. Nat. G. Doria, Genova* (1900). *Annali Mus. Civ. Stor. Nat. Giacomo Doria, Genova*, 76: 93-102.
- 1969. Ditto. III. Species described by Stein in 1900, *Természetr.Füz.*, Volume 23. *Dtsch. Ent. Z. N. F.*, 16 : 81-90.
- Stein, P. 1900. Einige dem Genueser Museum gehörige aus Neu-Guinea und Umgegend stammende Anthomyiden. *Ann. Mus. Civ. Stor. Genova*, Ser. 2, 20: 374-395.
- 1900. Anthomyiden aus Neu-Guinea. *Természetr. Füzetek.*, 23: 129-159.
- Vockeroth, J. R. 1972. A review of the world genera of Mydaeinae, with a revision of the species of New Guinea and Oceania (Diptera : Muscidae). *Pacif. Ins. Mon.*, 29: 1-134.